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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
103544.00999US2

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on Aug. 10, 2005

Signature Laura E.B. McGinn

Typed or printed name Laura E.B. McGinn

Application Number	Filed
09/502,133	February 11, 2000

First Named Inventor
Harold E. Helson

Art Unit	Examiner
2123	W.D. Thomson

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____.

☒ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 35,761

Signature

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Telephone number

8-10-05
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Harold E. Helson

Serial No.: 09/502,133 Group Art Unit: 2123

Filed: February 11, 2000 Examiner: William D. Thomson

Title: **ENHANCING STRUCTURE DIAGRAM GENERATION**

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

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Laura E.B. McGinn

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

In the final office action dated February 11, 2005, the Examiner rejected pending claims 1, 5, 9 and 13-27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,434,796 issued to Weininger ("Weininger") in view of User's Guide to CS ChemFinder 4.0 ("ChemFinder") and Chem3D CH 1997 ("Chem3D").

It is apparent from the office action that the Examiner has (1) rejected independent claims 1, 5 and 9 over the combination of Weininger and ChemFinder, and (2) rejected remaining claims 13-27 over the combination of Weininger, ChemFinder, and Chem3D.

For the reasons set forth below, each of these rejections should be withdrawn.

I. Independent Claim 1 and Dependent Claims 13-27

Independent claim 1 is directed to a method for use in deriving a chemical structure diagram. The method features the steps of identifying, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure; representing the instance of symmetry as a list of groups of equivalent atoms and bonds; and expressing the instance of chemical structural symmetry in the chemical structure diagram.

The Examiner contends that Weininger discloses all the limitations of claim 1 except representing the instance of symmetry as a list of groups of equivalent atoms and bonds. The Examiner contends that ChemFinder discloses this element on pp. 82-83 "substituents" and 89-90 "similarity rules," and that it would have been obvious to combine these references.

This rejection should be withdrawn for a number of reasons. First, contrary to the Examiner's assertions, Weininger does not disclose or suggest identifying, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure. In fact, Weininger does not disclose or suggest identifying any chemical structural symmetry. (The word "symmetry" does not appear to be mentioned anywhere in the reference.) The particular passage of Weininger cited by the Examiner (col. 8, lines 19-60) only discloses use of different types of digital encoding for representing molecules and their structures. There is no disclosure or suggestion of identifying chemical structural symmetry.

Second, ChemFinder does not disclose or suggest representing the instance of symmetry as a list of groups of equivalent atoms and bonds. The particular portion of ChemFinder cited by the Examiner (pp. 82-83 "substituents" and 89-90 "similarity rules") relates to pattern matching. In particular, it specifies that a query will match target structures when they contain the query as a substructure. Such pattern matching does not relate to and is not symmetry. (The Examiner acknowledges that ChemFinder also does not disclose this step.)

Third, neither reference discloses expressing the instance of chemical structural symmetry in the chemical structure diagram. The portion of the Weininger reference cited by the Examiner for supposedly disclosing this element specifies that aromatic rings (rings with

circles drawn inside them) are chemically equivalent to rings with alternating single and double bonds. This does not relate to symmetry in a chemical structure diagram.

The combination of Weininger and ChemFinder thus fails to disclose or suggest multiple elements of claim 1. In addition, the Chem3D reference (cited against other claims) fails to cure the defects of Weininger and ChemFinder.

Independent claim 1 is therefore patentable over the cited references. Furthermore, claims 13-27 depend on claim 1 and are also patentable over these references.

II. Independent Claim 5

Independent claim 5 was also rejected over the combination of Weininger and ChemFinder. Claim 5 is patentable over these references because, as explained above, neither reference discloses identifying, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure. In addition, neither Weininger, nor ChemFinder discloses representing the instance of symmetry as a list of groups of equivalent atoms and bonds. Furthermore, as mentioned above, neither reference discloses expressing the instance of chemical structural symmetry in the chemical structure diagram.

The rejection of claim 5 should therefore be withdrawn.

III. Independent Claim 9

Independent claim 9 was also rejected over the combination of Weininger and ChemFinder. Claim 9 is patentable over these references because neither reference discloses computer software that can be used to identify, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure. In addition, neither reference discloses computer software that can represent the instance of symmetry as a list of groups of equivalent atoms and bonds. Moreover, neither reference discloses computer software that can be used to express the instance of chemical structural symmetry in the chemical structure diagram.

The rejection of claim 9 should therefore be withdrawn.

IV. Conclusion

Claims 1, 5, 9 and 13-27 are pending in the present application. For the reasons set forth above, the rejections of these claims should be withdrawn.

The Commissioner is hereby authorized to charge any fee deficiency, or credit any overpayment to our Deposit Account No. 08-0219.

Respectfully submitted,

Dated: August 10, 2005

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